

KUDRYAVTSEV, Vladimir Nikolayevich; ZHARENKOV, F.A., dotsent, kand.tekhn.
nauk, retsenezent; VOLZHENSKAYA, A.M., inzh., red.; VASIL'YEVA,
V.P., red.izd-va; SHCHETININA, L.V., tekhn.red.; FRUMKIN, P.S.,
tekhn.red.

[Planetary gear transmissions] Planetarnye peredachi. Moskva,
Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 279 p.
(MIRA 13:3)

(Gearing)

VOLZHENSKIY, A., prof., laureat Leninskoy premii; KOGAN, G., kand.tekhn.
nauk

Gypsum is the associate of cement. Na stroi.Ros. 3 no.9:27-29
S '62. (MIRA 15:12)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).

(Gypsum)

VOIZHENSKIY, A.V., prof., doktor tekhn.nauk; FERRONSKAYA, A.V., kand.tekhn.nauk;
MIKHAYLOVA, G.F., inzh.

Sulfate resistance of gypsum-cement-pozzuolan and gypsum-slag-cement
binders of improved strength. Stroil. mat. 11 no.10:30-31 0 '65.
(MIRA 18:10)

DIP										S I C D I F G H J K L M N O P Q R S T U V W X Y Z										A B C D E F G H I J K L M N O P Q R S T U V W X Y Z										A B C D E F G H I J K L M N O P Q R S T U V W X Y Z									
SY AND MD LETTER										AUTHOR INDEX										SY AND MD INDEX										MATERIALS INDEX									
<p>Volzhenskii, A. V. PRODUCTION OF SILICATE BRICK. <i>Stroitel' Material</i>, No. 9, pp 17-25 (1933).—The most appropriate schedule of temperature changes in the vapor-treating autoclave and some factors influencing the strength of the brick are discussed.</p>																																							

1ST AND 2ND SECTIONS										3RD AND 4TH SECTIONS									
PROCESSES AND PROPERTIES INDEX																			
<div style="position: absolute; top: 10px; left: 10px; font-size: 2em; font-weight: bold;">CA</div> <div style="position: absolute; top: 10px; right: 10px; font-size: 2em; font-weight: bold;">19</div> <div style="position: absolute; top: 350px; left: 300px; text-align: left;"> <p>Thermal balance of an autoclave for steam treatment of silica bricks A. V. Volynskii, <i>Stroitel. Materialy</i> 1936, No. 11, 17-21</p> </div>																			
ASB-15A METALLURGICAL LITERATURE CLASSIFICATION										EDOW BOWERY									
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Plaster of Paris. A. Y. Kolbenschik. Russ. 52,113.
Nov. 30, 1937. Gypsum stone is ground in a mixt. with
burned lime. The gypsum is dehydrated by the heat
generated in the slaking of the lime with H_2O present in
the gypsum stone.

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS																																																	
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<div style="display: flex; justify-content: space-between;"> ca 20 </div> <p>Treatment of building materials with superheated steam. A. V. Volshenski. <i>Stroud. Materialy</i> 1937, No. 1, 26-34; cf. A. V. Volshenski. <i>Stroud. Materialy</i> 1936, No. 11-12; 1937, No. 7; 1938, No. 9; <i>Stroud. Prap.</i> 1938, No. 10; <i>Stroud. Prap.</i> 1938, No. 10; 1939, No. 34, 35. The method is suggested for treating lime-sand brick. A readily sol. compd. is introduced into the lime acid. present in the pores of the material (NaOH and KOH, MgCl₂, Ca(NO₃)₂, NaNO₃, etc.). The vapor pressure decreases with the increase of concn. of the latter, permitting higher temps. to be obtained at relatively low pressures. Higher mechanical strength is obtained. An increased percentage of NaOH leads to a conglomeration of sand particles to a glass-like monolith.</p> <p style="text-align: right;">R. R. Stefanowsky</p>																																																											
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<p>Estrich gypsum. A. V. Volshenakht. <i>Soviet. Metallurgy</i> 1937, No. 4-5, 87-9(1937); <i>Chem. Zentr.</i> 1938, I, 404. --In view of the fact that to date practically no estrich gypsum has been produced in Russia, tests with 2 kinds of gypsum are described. With a CaO content of 33% and a SO₃ content of up to 46.5% together with a 4-6-hr. roasting period at 800-900°, a favorable setting time and satisfactory strength are obtained. M. G. Moore</p>																																																			
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117 AND 118 TESTS

PROCESSES AND PROPERTIES INDEX

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POZZUOLANIC properties of tripoli and clay of the Khotkovo deposits. A. V. Volzhenskii. *Soviet. Materialy* 1937, No. 8, 33-7. R. E. S.

ASME-A METALLURGICAL LITERATURE CLASSIFICATION

GROUPS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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PROCESSING AND PROPERTIES INDEX																			
<p><i>Factors from raw gypsum and slaked lime. E. I. Olov and A. K. Vedrenskiy. <i>Stroitel. Materialy</i> 1937, No. 8, p. 6. Slaked lime of powder gypsum and slaked lime of a mixture activity after storage in a silo have the properties of a mixt. of alabaster with slaked lime. E. Gofenawsky</i></p>																			
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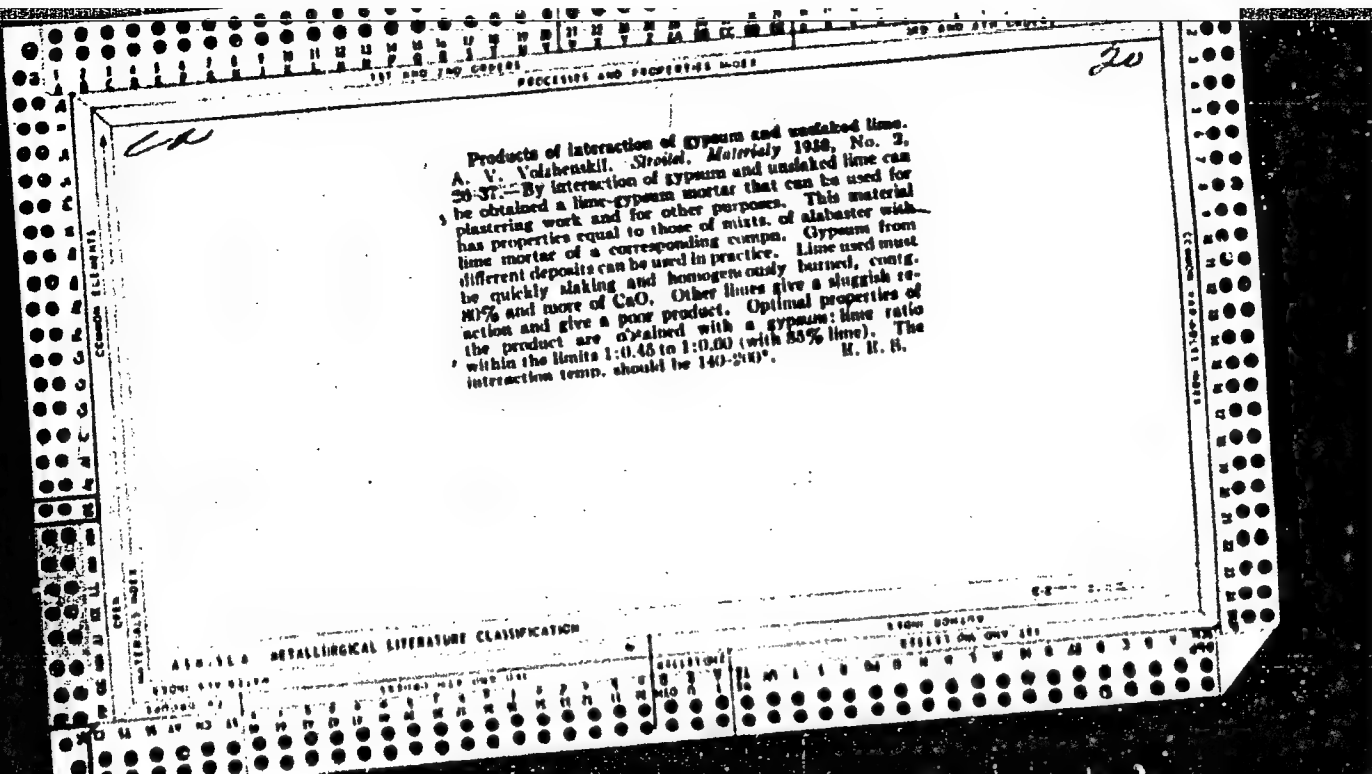
Mortar. A. V. Volzhinski. Russ. 82,610, Feb. 28,
1938. Gypsum; 14 groups with CaO.

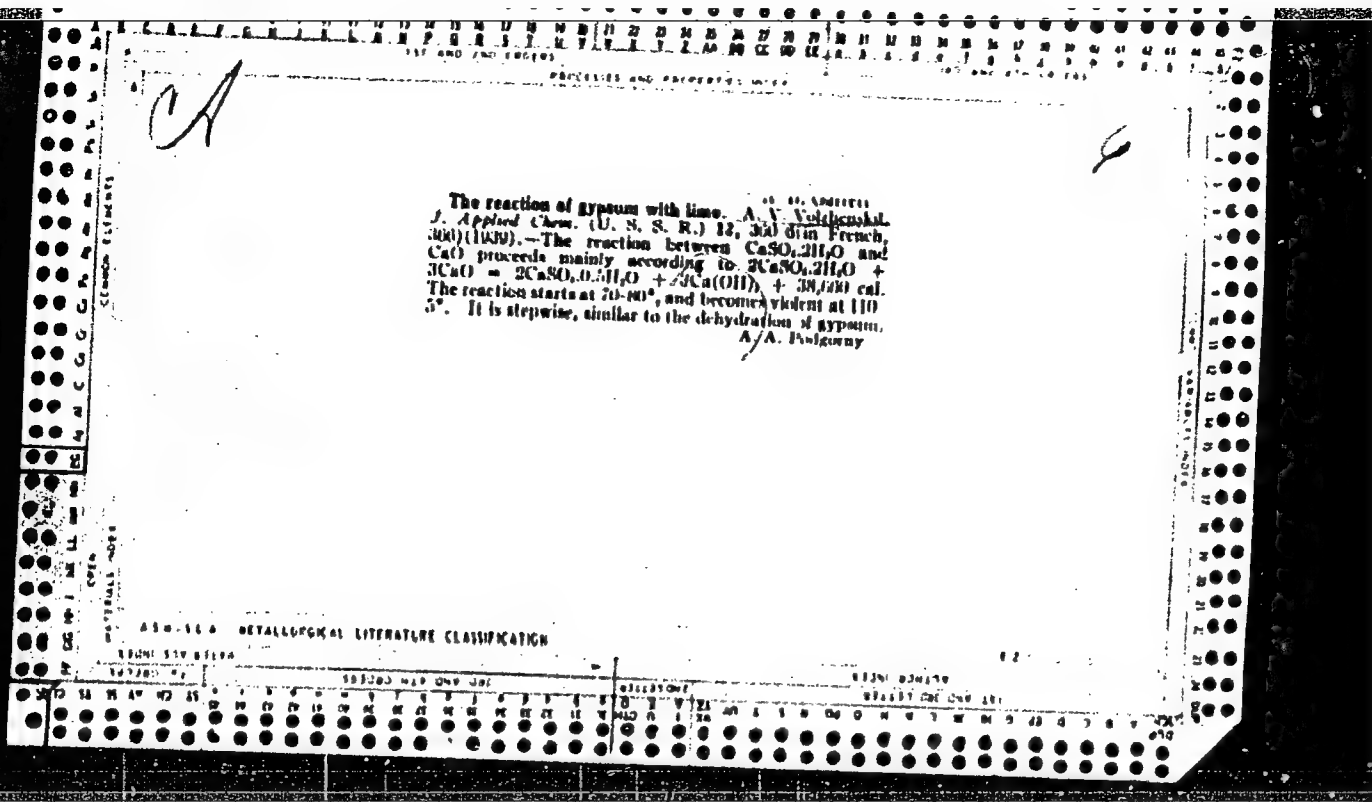
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Semipiant investigations on the production of a binding material from burnt lime and gypsum. A. V. Volichen. skil. Prom. Sovetsk. Material. I, No. 4, 37-40(1940); st. C. A. 32, 64209. —The results of lab. investigations were checked under semipiant conditions at two different plants. The expediency of industrial application of this method was fully demonstrated. E. R. Stefanovsky

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PROCESSING AND PROPERTIES INDEX																			
<p>Production of lime-gypsum mixtures and increase of their resistance to water. A. V. Volzhenskii. <i>Prum. Stroitel. Material.</i> 2, No. 10-11, 43-0(1980). Production processes are described with flow sheets and the uses of this material are given. Water resistance of the mortar is attained by adding 25% of tripoli or ash from pulverized coal. P. K. Perlanovsky</p>																			
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The rapid determination of CaO and MgO in lime and limestone. A. V. Volzhenskii. *From. Steels. Material* 1941, No. 5, 14-18; *Chem. Zvest.* 1942, II, 2837.—A critical study of the method of Trömel (Zement No. 17 (1926)) and that of Diener (C. A. 26, 1089). J. M. Noy

VOLEHENSKI, A. V.

Water-resistant gypsum. A. V. Vozhen-ski. Stroitel
Prom. 21, No. 12, 12-14 (1943). Tests were made on in-
creasing the water-resistance of gypsum by an addn. of
hydraulic substances (tripoli, ground blast-furnace slag,
ground brick and ash from Donetsk coal). Mixes of
gypsum, lime and one of the additives were air-hardened
and water-hardened and tested for compressive strength.
Some of the mixes gained strength with time whether kept
in air or in water. The highest resistance to H_2O and to
frost was displayed by specimens made from gypsum 80
and lime + additive 20%. Next came specimens with
60% of gypsum. Specimens contg. a wt. ratio lime: addi-
tive 1:3 at the same gypsum content were more water-
resistant, while specimens contg. more lime than hy-
draulic additive were more resistant to alternate wetting
and drying.
M. Hosh

1ST AND 2ND COPIES		PROCEDURES AND PROPERTIES INDEX		3RD AND 4TH COPIES	
C		<p>Some problems in the manufacture of structural gypsum. A. V. Kuznetsov. <i>Sbornik Trudov Nauch.-Issledovatel. Inst. Gipsosov Proizv.</i>, 1945, pp. 22-27. Comparison is made of the following three methods for the manufacture of structural gypsum: (1) calcination of gypsum in a suspended state, (2) treatment of gypsum with steam under pressure, and (3) preparation of mixed gypsum-lime binding material with calcination of the gypsum by the heat of slaking. To improve the water resistance of the gypsum shapes, V. developed gypsum-lime portland cement mixtures containing 65 to 80 gypsum, 5 to 15 lime, and 10 to 25% hydraulic admixture. The latter can consist of ash, tripoli, diatomites, metallurgical slags, etc. The more active the hydraulic admixture, the more water-resistant is the binder. The most effective admixtures were active tripoli and blast-furnace slags. H. Z. K.</p>			
A 18-11.4 METALLURGICAL LITERATURE CLASSIFICATION					
18000 17000 16000 15000 14000 13000 12000 11000 10000 9000 8000 7000 6000 5000 4000 3000 2000 1000 0		18000 17000 16000 15000 14000 13000 12000 11000 10000 9000 8000 7000 6000 5000 4000 3000 2000 1000 0		18000 17000 16000 15000 14000 13000 12000 11000 10000 9000 8000 7000 6000 5000 4000 3000 2000 1000 0	

VOLZHENSKIY, A. V.

VOLZHENSKIY, A. V. and KISLYAKOV, L. A. "Gypsum materials and goods for constructing high buildings", Vest. stroit. materialy, 1948, Issue 6, p. 22-26.

SO: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 7 ,949).

32441. Gaysinskiy, I. Ye., i Abashkina, B. F. Vliyaniye obrabotki na begunakh tsementnykh rastvorov i betonov na skorost' ikh tverdeniya. Materialy i konstruktsii v sovr. arkhitekture, No. 3, 1949, s. 100-07.

SO: Letopis' Zhurnal'nykh Statey Vol. 44

IVANOV, I.T., kandidat tekhnicheskikh nauk, otvetstvennyy redaktor;
ANTONOV, K.K., redaktor; VOLZHENSKIY, A.V., redaktor; GORNOV, V.N.,
redaktor; KUZNETSOV, G.F., redaktor; PEVNER, I.V., inzhener,
redaktor; ROTERT, P.P.; FRIDBERG, G.V., redaktor; PZCHOVSKAYA,
T.V., tekhnicheskii redaktor

[Skyscraper designs; experience in design and construction] Konstruk-
tsii vysoknykh zdaniy; iz opyta proektirovaniya i vozvedeniya. Red.
kollegiya I.T.Ivanov, K.K.Antonov, A.V.Volzheniskiy i dr. Moskva,
Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1952. 103 p.
[Microfilm] (MLRA 7:10)

1. Chlen-korrespondent Akademii arkhitektury SSSR (for Antonov,
Volzhenskiy, Gornov, Kuznetsov, Rotert) 2. Akademiya arkhitektury
SSSR, Moscow. Institut stroitel'noy tekhniki.
(Skyscrapers)
(Architecture--Designs and plans)

VOLZHENSKIY, A., Prof.; KOGAN, G., Eng.

Plaster of Paris

Use of large panels made of plaster of Paris and concrete for partitions. Biul. stroi. tekhn. 10, No. 5, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

1. VOLZHENSKIY, A. Prof., KOGAN, G. Eng.
2. USSR (600)
4. Concrete Blocks
7. Use of large panels made of plaster of Paris and concrete for partitions, Pivl. stroi. tekhn. 10 No. 6, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

VOLZHENSKIY, A.V., professor, chlen-korrespondent.

On heat insulating materials for reinforced concrete wall panels. Bnl.
stroi.tekh. 10 no.10:23-25 My '53. (MLRA 6:8)

1. Akademiya arkhitektury SSSR.
(Insulation (Heat)) (Reinforced concrete construction)

VOLZHENSKIY, A.V., professor; KISLYAKOV, L.A., kandidat tekhnicheskikh nauk; LEMKIN, L.Ye., inzhener, nauchnyy redaktor; ROSTOVTSOVA, M.P., redaktor; PERSON, M.N., tekhnicheskii redaktor

[Production of hollow reinforced-concrete beams and panels for ceilings and floors] Proizvodstvo shlezobetonnykh pustotelykh balok-nastilov i paneli perekryti. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1954. 60 p. (MLRA 7:10)

1. Chlen-korrespondent Akademii arkhitektury SSSR (for Volzhenskiy)
(Girders) (Precast concrete construction)
(Floors, Concrete)

VOLZHENSKIY, A.V., professor, doktor tekhnicheskikh nauk; KOGAN, G.S.,
kandidat tekhnicheskikh nauk; ARBUZOV, N.T., kandidat tekhnicheskikh nauk;
SOROKER, V.I., kandidat tekhnicheskikh nauk, redaktor;
GIMPEL'SON, A.Z., redaktor; LYUDKOVSKAYA, N.I., tekhnicheskii
redaktor

[Gypsum-concrete panels for partitions and inner lining of outside
walls] Gipsobetonnye paneli dlia peregorodok i vnytrennei obli-
tsovki naruzhnykh sten. Moskva, Gos. izd-vo lit-ry po stroitel'-
nym materialam, 1955. 184 p. (MLRA 9:7)

1. Chlen-korrespondent Akademii arkhitektury SSSR (for Volzhenskii)
(Concrete slabs)

VOIZHENSKIY, A., professor; IVANNIKOVA, R., inzhener

Gypsum cement and gypsum slag binding materials. Stroi. mat.
izdel. i konstr. 1 no. 4:13-16 Ap'55. (MLRA 8:10)

1. Chlen-korrespondent Akademii arkhitektury SSSR (for Voizhen-
skiy)

(Gypsum) (Building materials)

VOLZHENSKIY, A.V., professor; KOGAN, G.S., inzhener.

Making large gypsum concrete panel wall slabs on stands having tilting
platforms. Rats. i izobr.predl. v strel. no.121:3-11 '55.(MIRA 9:7)
(Walls) (Concrete slabs)

VOLOZHENSKIY, A.V.: professor, redaktor; SHVARTSZAYD, M.S., kandidat
tekhnicheskikh nauk, redaktor; IVANOV, O.M., kandidat tekhnicheskikh
nauk, nauchnyy redaktor; TUMARKIN, D.M., inzhener, redaktor
izdatel'stva; VOLKOV, V.S., tekhnicheskiy redaktor; MEL'NICHENKO,
F.P., tekhnicheskiy redaktor

[Autoclave materials and articles; a collection of articles]
Avtoklavnye materialy i izdeliya; sbornik statei. Pod red. A.V.
Volzhenskogo i M.S.Shvartszayda. Moskva, Gos. izd-vo lit-ry po
stroit. i arkhitekture, 1956. 125 p.
(MLRA 9:7)

1. Akademiya arkhitektury SSSR, Moscow. 2. Chlen-korrespondent
Akademii arkhitektury SSSR (for Volzhenskiy)
(Autoclaves)

VOLZHENSKIY, A. V.

Using the autoclave method in the production of building materials,
products, and structural components. Mat. issl. v pom. proekt. i
stroi. Kar. Kan. no.2:9-20 '56. (MIRA 11:4)
(Building materials) (Autoclaves)

Translation from: Referativnyy zhurnal, Geologiya, 15-57-10-14334
p 159 (USSR)

AUTHORS: Volzhenskiy, A. V., Shvartszayd, M. S., Ivanov, V. I.

TITLE: Autoclave-Treated Structural Products and Details of
the Kara-Kum Sands (Avtoklavnyye stroitel'nyye izdeliya
i detali iz karakumskikh peskov)

PERIODICAL: V sb: Materialy issledovaniy v pomoshch' proektir.
i str-vu Karakumsk. kanala. Nr 2, Ashkhabad, AN Turkm
SSR, 1956, pp 27-66

ABSTRACT: The Kara-Kum sands contain 77 to 83 percent silica and
7 to 13 percent sesquioxides. They are very fine-
grained (dominant grain diameter of 0.15 mm to 1.3 mm).
After partial regrinding of this sand, milling it
together with slaked lime, and submitting it to special
autoclave treatment, it may be used both for cellular
(foamy silicate) and dense silicate materials and
products. It may also be used to make silicate bricks
meeting GOST (All-Union State Standard) requirements.
V. P. Yeremeyev

Card 1/1

YDLZHENSKIY, A.V.

USSR/Chemical Technology - Chemical Products and Their Applications - Silicates. Glass. Ceramics. Binders. I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9084

Author : Volzhenskiy, A.V., and Burov, Yu.S.

Inst :

Title : The Application of Autoclave Treatment in the Preparation of Aggregate Concrete and Reinforced Concrete.

Orig Pub : Beton i zhelezobeton, 1956, No 8, 277-280

Abstract : The properties of autoclave-hardened concrete and of concrete hardened under normal conditions are described. The concrete was prepared from six cements of varying mineral composition. Autoclave treatment considerably increases the hardening rate of concrete and

Card 1/

USSR/Chemical Technology - Chemical Products and
Their Applications - Silicates. Glass.
Ceramics. Binders.

I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9084

makes it possible to obtain a concrete which after steaming has a strength equal to the R_{28} [TN: crushing strength?; see translation abstract 9069] of normally hardened concrete. The substitution of a part of the cement with finely ground sand markedly increases the strength of the steamed concrete. When a charge of 170-250 kg/m³ of cement clinker is used, the strength of the concrete can be increased 30-70% by the addition of finely ground sand or, alternately, 50% of the clinker may be substituted with finely ground sand without a reduction in the strength of the concrete. By the application

Card 2/

USSR/Chemical Technology - Chemical Products and
Their Applications - Silicates. Glass.
Ceramics. Binders.

I-10

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9084

of autoclave hardening, it is possible to obtain from fine-grained Karakum sand a concrete which has a strength exceeding by a factor of 1.5 - 2 that of normally hardened concrete. Autoclave treatment is particularly effective in the case of concretes prepared from beletic and mixed cements as well as concretes prepared from waste metallurgical slags and from ashes. After autoclave hardening concretes prepared from mixed bonds (50% ground quick-lime and 50% ground sand) have a strength equal to 100-160% that of normally hardened concrete prepared with the expenditure of an equal amount of cement clinker. Finely ground lime-sand concretes prepared from a mixed bond charge

Card 3/4

USSR/Chemical Technology - Chemical Products and I-10
Their Applications - Silicates. Glass.
Ceramics. Binders.

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, 9084

of 400-500 kg/m³ (ground quicklime and ground sand in the ratio 1 : 1) after autoclave hardening have the same strength as normally hardened concrete cements prepared from portland cement charges of 300-400 kg/m³. Autoclave-hardened concretes prepared from ground quicklime have withstood over 100 cycles of alternate freezing and thawing; similar concretes prepared from hydrated lime were destroyed after 15-25 cycles. Best results are obtained from an economic point of view when the articles are held at maximum temperature and a pressure of 8-15 atm for 4 - 8 hours.

Card 4/4

VOIZHENSKIY, A., doktor tekhnicheskikh nauk; BUROV, Yu., kandidat
tekhnicheskikh nauk.

Using waste slags and ashes as binding materials for autoclave products.
Stroi.mat. 3 no.1:34-35 Ja '57. (MLRA 10:3)
(Building materials)

VOLZHENSKIY, A.V., professor; POPOV, L.N., inzhener.

Highly resistant autoclave treated concrete for mine building.
Shakht. stroi. no. 8:23-24 Ag '57. (MLRA 10:9)
(Precast concrete construction)
(Autoclaves)

VOLZHENSKIY, A.V.

~~VOLZHENSKIY, A.V.~~, prof.; MOCHALOV, A.I., inzh.; BUROV, Yu.S., kand.
tekhn.nauk; SILAYENKOV, Ye.S., inzh.

Autoclaved concrete made with metallurgical slag and ash binders.
Bet. i zhel. -bet. no.8:322-325 Ag '57. (MIRA 10:10)

1. Deystvitel'nyy oshen Akademii stroitel'stva i arkhitektury (for
Volzhenskiy)

(Concrete)

VOLZHENSKIY, A.V., prof., doktor tekhn.nauk, red.; GUROV, Yu.S., red.izd-va;
BOROVNEV, N.K., tekhn.red.

[Properties of autoclave concretes and products made from them;
collected articles] Svoistva avtoklavnykh betonov i izdelii iz
nikh; sbornik statei. Pod red. A.V.Volzhenetskogo. Moskva, Gos.
izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam, 1958.
(MIRA 11:6)
167 p.

1. Akademiya stroitel'stva i arkhitektury SSSR.. Institut novykh
stroitel'nykh materialov, otdelki i oborudovaniia zdani. 2.
Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR
(for Volzhenskiy)
(Concrete)

VOLZHENSKIY, A.V., prof., doktor tekhn.nauk

New possibilities for making autoclave hardened building products.
Nauch.dokl.vys.shkoly; stroi. no.1:150-157 ' 58. (MIRA 12:1)

1. Deyatvitel'nyy chlen Akademii' stroitel'stva i arkhitektury SSSR.
2. Rekomendovana kafedroy tekhnologii vyazhushchikh, betonov i keramiki
Moskovskogo inzhenerno-stroitel'nogo instituta imeni V.V. Kuybysheva.
(Autoclaves) (Concrete)

VOLZHENSKIY, A.V., prof.; POPOV, L.N., inzh.

Using mixed fine ground portland cements in preparing concretes.
Bat. 1 zhel.-bet. no.3:88-93 Mr '58. (MIRA 11:3)

1. Doystvitel'nyy chlen Akademii stroitel'stva arkhitektury SSSR
(for Volzhenskiy). (Concrete)

✓.
VOLZHENSKIY, A., doktor tekhn.nauk; SILAYENKOV, Ye., inzh.

Behavior of steel reinforcements in slag-sand concrete products.
Stroi.mat. 4 no.10:30-31 0 '58. (MIRA 11:11)

1. Deyativitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR.
(for Volzhenskiy). (Reinforced concrete)

SOV/97-58-10-2/17

AUTHORS: Volzhenskiy, A.V., Member of ASIA SSSR, Professor; and
-Stambuiko, V.I., Engineer

TITLE: Gypsum-Cement-Polluolana Binding Materials and Concretes
Based on them (Gipsotsementnoputstsolanovyye vyazhustchiye
veshchestva i betony na ikh osnove)

PERIODICAL: Beton i zhelezobeton, 1958, Nr 10, pp 363-367 (USSR)

ABSTRACT: Investigations carried out show that a combination of
gypsum, portland cement and hydraulic additives (tripoli,
waste aluminium sulphate and various acid concentrates
obtained by burning fuels) can be used to obtain rapid-
hardening hydraulic binding materials. A minimum
content of 20-25% of cement is used with gypsum contain-
ing 60-50% of water and 20-25% of active hydraulic
additive. The amount of this additive should be strictly
controlled so that the concentration of calcium oxide in
aqueous solution does not exceed 0.7-0.9 g/l during the
first 2-7 days of hydration. Gypsum-concrete-pozzuolana
binders using quantities of 300-400 kg/m³ give rapid-
hardening, water-stable concretes marks 75-150, and
Card 1/4 plasters marks 25-75. The combination of these
materials was worked out in MISI imeni V.V. Kuybyshev.

SOV/97-58-10-2/17

Gypsum-Cement-Pozzuolana Binding Materials and Concretes Based on them

Nr. 104 Trust in Leningrad is manufacturing panels based on hydro-cement binders. Glavmosstroy, together with ASIA SSSR and MISI, are preparing for the manufacture of partition panels based on the above materials. Trials with these materials have not all been successful; where the products were not satisfactory the cause was usually due to the formation of complex salts in hardened concrete, as, for example, $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot 3\text{CaSO}_4 \cdot 31\text{H}_2\text{O}$. It is assumed that the formation of this salt from calcium aluminate and gypsum is simultaneous with an absolute volume increase (2.2) of the solid phase, which brings about strong tensions in cement resulting in collapse of the construction. Formation of hydro-sulpho-aluminate of calcium in concrete was studied by Lafuma (Ref 2), V.N. Yung (Ref 3), P.P. Budnikov (Ref 4), V.M. Moskvina (Ref 5) and others. A high concentration of calcium hydroxide in aqueous solution is responsible for the formation of $3\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Ca}(\text{OH})_2 \cdot n\text{H}_2\text{O}$ during the phase of hardening of cement. The results of the tests lead us to assume that the compounds have considerable

Card 2/4

SOV/97-58-10-2/17

Gypsum-Cement-Pozzuolana Binding Materials and Concretes Based on them

resistance against the action of sulphides of sodium and calcium, and partial resistance against magnesium. The problem of obtaining hydraulic gypsum-cement-pozzuolana binders with a predominant gypsum content was studied in MISI by A.V. Volzhenskiy and R.V. Ivannikova, and further investigated by the authors of this article. The authors assume that active hydraulic additives introduced in proper quantities in the system gypsum + portland cement + water, or gypsum + granulated blast furnace slag + water, fulfil two basic functions: (1) they lower the concentration of calcium hydroxide in aqueous solution, and (2) they bind sulphates and calcium aluminate and form complex compounds. Table 1 gives results of investigations defining the effect of the composition and activity of cements and tripoli on the physical and mechanical properties of binders. Table 2 shows that increased content of tripoli favourably influences the properties of these materials. Fig 1 shows graphically changes of concentration of CaO in aqueous solution of gypsum, portland cement and

Card 3/4

SOV/97-58-10-2/17

Gypsum-Cement-Pozzuolana Binding Materials and Concretes Based on them

hydraulic additives. The graph in Fig 2 shows changes of strengths of concrete with time and varying content of gypsum-cement binders.

There are 2 figures, 2 tables and 12 references, of which 6 are Soviet, 1 Swedish, 2 English, 2 French and 1 German.

Card 4/4

VOLZHENSKIY, A.V., doktor tekhn. nauk; KOGAN, G.S., kand. tekhn.
nauk; TSUKANOV, Yu.S.,

[Gypsum-cement-puzzuolanic binding materials and concretes
on their base] Gipsotsementnoputstsolanov viazhushchie
veshchestva i betony na ikh osnove. Riazan', Riazanskaia
kompleksnaia nauchno-issl. stantsiia-laboratoriia po sel'-
skomu stroitel'stvu NIISZ AS i SSSR, 1961. 48 p.
(MIRA 17:8)

VOLZHENSKIY, A.V.; GLADIKH, K.V.

Binders made of granulated fuel slags. Nauch.dokl.vys.shkoly;
stroitel'no. no.1:171-178 '59. (MIRA 12:10)

1. Rekomendovana kafedroy tekhnologii vyazhushchikh betonov i
keramiki Moskovskogo inzhenerno-stroitel'nogo instituta imeni
V.V.Kuybysheva.

(Binding materials) (Slags)

VOLZHENSKIY, A.V.; SILAYENKOV, Ye.S., inzh.

Deformation of fine grained autoclave hardened concretes
caused by the change of their moisture content. Bot. i zhel.-
bet. no.4:175-179 Ap '59. (MIRA 12:6)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).
(Concrete--Testing)

~~VOLZHENSKIY, A.V., prof.;~~ SYSOYEV, V.V., inzh.

Effect of various admixtures and autoclave processes on the
activity of blast-furnace waste slags. Stroi. mat. 5 no.5:
27-29 My '59. (MIRA 12:8

1. Deystvitel'nyy ohlen Akademii stroitel'stva i arkhitektury (for
Volzhenskiy).

(Slag--Testing)

VOLZHENSKIY, A.V.; STAMBULKO, V.I.

Gypsum-cement and gypsum-slag binding materials with waterproofing additives. Trudy NIIZHB no.10:57-79 '59.

(MIRA 13:3)

(Binding materials) (Waterproofing)

VOLZHENSKIY, A.V., prof., doktor tekhn.nauk

Relation of structure and quality of cement stone to its formation
and hardening. Stroimaterialy. 10 no.4:10-13 Ap '64. (MIRA 17:5)

VOLZHENSKIY, A.V., prof., doktor tekhn. nauk; PECHURO, S.S.

Requirements of industrial construction and the gypsum
industry. Stroi. mat. 10 no.1:15-18 Ja'64. (MIRA 17:5)

1. Glavnyy spetsialist Gosudarstvennogo instituta po
proyektirovaniyu predpriyatiy promyshlennosti stroitel'nykh
materialov (for Pechuro).

VOLZHENSKIY, A.V., prof.; TIRANOVA, T.M., inzh.

Clinkerless binding materials made out of phosphoric slag.
Stroi. mat. 9 no.6:31-33 Je '63. (MIRA 17:8)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).

L 27102-66 ENT(m)

ACC NR: AP6017414

SOURCE CODE: UR/0097/65/000/010/0033/0035

AUTHOR: Volzhenskiy, A. V. (Doctor of technical sciences; Professor);
Stambulko, V. I. (Candidate of technical sciences); Aradovskiy, Ya. L. (Engineer)

ORG: none

TITLE: Gypsum-cement-pozzolana concrete¹⁵ for panel-type retaining structures

SOURCE: Beton i zhelezobeton, no. 10, 1965, 33-35

TOPIC TAGS: concrete, tensile strength, elastic modulus

ABSTRACT: Rigid gypsum-cement-pozzolana concrete can be used for making panel-type retaining structures since it satisfied the requirements of Construction Specifications and Regulations. About 360-450 kg of binding material is used per m³ of concrete in producing heavy GCP concretes (grades 150 and 200). Clay-filled concrete and mortar of grades 150 and higher requires 420-550 kg of GCP binder per cubic meter of concrete. Tests show a continuous increase in the strength of all specimens with time. In one year a strength increase of 25-30% over the 28-day strength was observed. Prismatic specimens of GCP concrete show a somewhat greater strength than that stipulated by Construction Specifications and Regulations. The prismatic tensile strength meets the construction requirements. A study of the deformative properties of rigid GCP concretes under momentary loading shows that maximum compressibility is equal to that of ordinary concrete,

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UDC: 666.944.001.5:69.022.4

L 27102-66

ACC NR: AP6017414

being $0.7 \cdot 10^{-3}$, $1.2 \cdot 10^{-3}$ and $1.0 \cdot 10^{-3}$ for heavy and light concretes and mortar based on GCP binding material, respectively. The modulus of elasticity under compression is $(3.1-3.5) \cdot 10^5$ kg/cm² for heavy GCP concretes, $(1.3-1.48) \cdot 10^5$ kg/cm² for clay-filled concrete and $(1.8-2.4) \cdot 10^5$ kg/cm² for mortar, which meets the requirements of Construction Specifications and Regulations. The paper was written in support of Engineer Ya. L. Aradovskiy's thesis.

Orig. art. has: 3 figures and 4 tables. [JPRS]

SUB CODE: 11, 20 / SUBM DATE: none

Card 2/2 *h*

L 46601-66 EWT(m)

ACC NR: AP6012177

(A)

SOURCE CODE: UR/0413/66/000/007/0116/0116

8
B

INVENTOR: Volzhenskiy, A. V.; Kogan, G. S.; Tsuranov, L. M.

ORG: none

TITLE: Light-weight concrete. Class 80, No. 180514 [announced by the All-Union Scientific Research Institute of New Construction Materials, Academy of Construction and Architecture, USSR (Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov akademii stroitel'stva i arkhitektury SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 7, 1966, 116

TOPIC TAGS: concrete, ~~light weight concrete~~, construction material

ABSTRACT: An Author Certificate has been issued for light-weight concrete with a gypsum-cement binder and a porous mineral filler. In order to have the filler serve as the active hydraulic additive, a porous clay filler in a mixture with a binder containing 75—80% construction gypsum and 20—25% portland cement is suggested as the filler. (LD)

SUB CODE: 11/ SUBM DATE: 21Jan63/

Card 1/1 afs

UDC: 666.973.022.2

GERSHBERG, Osip Abramovich, prof., doktor tekhn. nauk, laureat
Gosudarstvennoy premii; VOLZHINSKIY, A. V., prof., retsenzent;
SIZOV, V. N., prof., doktor tekhn. nauk, retsenzent; IVANOV,
F. M., kand. tekhn. nauk, nauchn. red.

[Technology of concrete and reinforced concrete products]
Tekhnologiya betonnykh i zhelezobetonnykh izdelii. Moskva,
Stroizdat, 1965. 326 p. (MIRA 18:8)

1. Rukovoditel' kafedry "Tekhnologiya vyazhushchikh veshchestv
i betonov" Moskovskogo inzhenerno-stroitel'nogo instituta im.
V. V. Kuybysheva (for Volzhanskiy). 2. Rukovoditel' kafedry
"Stroitel'nyye materialy i izdeliya" Vsesoyuznogo zaochnogo po-
litekhnicheskogo instituta (for Sizov).

VOLZHENSKIY, A.V., prof., d ktor tekhn.nauk; GLADIKH, K.V., dotsent, kand.
tekhn.nauk

Some ways of improving cellular concrete products. Stroi.mat. 10
no.12:26-28 D '64. (MIRA 18:1)

VOLZHENSKIY, Aleksandr Vasil'yevich, Laureat Leninskoy premii,
doktor tekhn. nauk, prof.; BUROV, Yuriy Sergeyevich,
kand. tekhn. nauk; VINOGRADOV, Boris Nikolayevich;
GLADKIKH, Klara Vasil'yevna, kand. tekhn. nauk;
NIKOLAYEVA, N.M., red.izd-va; SHERSTNEVA, N.V., tekhn. red.

[Concretes and products based on slag and ash cements;
hardened in steam chambers and autoclaves] Betony i izdeliia
na shlakovykh i zol'nykh tsementakh; pri tverdenii v propa-
rochnykh kamerakh i avtoklavakh. Pod obshchei red. A.V.
Volzhenskogo. Moskva, Gosstroizdat, 1963. 361 p.

(MIRA 16:12)

(Precast concrete)

VOLZHENSKIY, A.V., prof., zasluzhennyy deyatel' nauki i tekhniki
RSFSR; IL'YENKO, I.A., inzh.; VINOGRADOV, B.N., inzh.

Deformation and strength properties of concretes made with
binding materials based on fuel granulated slags. Bet.
i zhel.-bet. 8 no.12:549-553 D '62. (MIRA 16:2)

1. Deystvitel'nyy chlen Akademii stroitel'stva i
arkhitektury SSSR (for Volzhenskiy).
(Concrete—Testing)
(Slag)

BUDNIKOV, P.P.; ALEKPEROV, M.S.; BAKLANOV, G.M.; BOLDYREV, A.S.;
BOS'KO, K.D.; VOLZHEISKIY, A.V.; GROKHOTOV, N.V.; ZHUKOV, A.V.;
ZABAR, L.B.; KITAYEV, Ye.H.; KOSHKIN, V.G.; KRUPIN, A.A.;
MURQMSKIY, P.G.; POPOV, A.N.; SUKHOTSKIY, S.F.; USPENSKIY, V.V.;
KHINT, I.A.; SHVAGIREV, M.P.; YUSHKEVICH, M.O.

Conference on increasing the durability of corrugated roofing
sheets. Stroi.mat. 8 no.1:p.3 of cover Ja '62. (MIRA 15:5)
(Roofing)

VOLZHENSKIY, A.V., laureat Leninskoy premii, prof., doktor tekhn.nauk;
VOROB'YEV, I.A.; GLADKIKH, K.V., inzh.; VINOGRADOV, B.N., inzh.;
IL'YENKO, I.A., inzh.

Use of binding materials made of granulated fuel slag for the
manufacture of wall materials. Stroi. mat. 8 no.5:5-8 My '62.
(MIRA 15:7)

1. Direktor zavoda stenovykh blokov No.21 Glavnogo upravleniya
promyshlennosti stroitel'nykh materialov pri ispolnitel'nom
komitete Moskovskogo gorodskogo Soveta deputatov trudyashchikhsya
(for Vorob'yev).

(Slag)
(Building materials)

VOLZHENSKIY, A.V., laureat Leninskoy premii, prof.; GLADKIKH, K.V., inzh.;
CHEN'-KHUA-IN [Ch'en-Hua-ying] inzh.

Air-entrained slag concretes obtained by thermal treatment in
steam chambers. Stroi. mat. 8 no.6:16-19 Je '62. (MIRA 15:7)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).

(Slag) (Lightweight concrete) (Autoclaves)

VOLZHENSKIY, A.V., doktor tekhn.nauk, prof.; GLADKIKH, K.V., inzh.;
VINOGRAOV, B.N.

Hardening of binding materials based on granulated fuel slags.
Sbor. ~~trud.~~ VNIINSM no.2:52-74 '60. (MIRA 15:1)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).

(Slag)
(Binding materials)

VOLZHENSKIY, A.V., prof., zasluzhennyy deyatel' nauki i tekhniki RSFSR;
IL'YENKO, I.A., aspirant

Heavy and light concretes with binders of granulated clinkers.
Stroi.mat. 8 no.1:31-35 Ja '62. (MIRA 15:5)

1. Daystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).

(Concrete)

VOLZHENSKIY, A.V., prof.

Organization of the production of building elements based on
gypsum-cement-pozzolan binding materials. Stroimaterialy. 8
no.3:17-18 Mr '62. (MIRA 15:8)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR.

(Building materials industry)

VOIZHENSKIY, A.V., prof.; FERRONSKAYA, A.V., inzh.

Cellular concretes with gypsum-cement-pozzolan binders. Bet. i zhel-
bet. no. 3:123-126 Mr '61. (MIRA 14:5)

1. Deystvitel'nyy ohlen Akademii stroitel'stva i arkhitektury SSSR.
(Lightweight concrete)

VOLZHENSKIY, A.V., prof.; VINOGRADOV, B.N., inzh.

Composition of ~~overburned~~ lime and causes of overburning. Stroitel'stvo
mat. 7 no.6:30-32 Je '61. (MIRA 14:7)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).
(Lime)

S/081/61/000/021/056/094
B110/B101

AUTHORS: Volzhenskiy, A. V., Ferronskaya, A. V.

TITLE: Honeycomb concretes on the basis of gypsum-cement-puzzolano binders

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 314, abstract 21K329 (Beton i zhelezobeton, no. 3, 1961, 123-126)

TEXT: The physical and mechanical properties of honeycomb concretes on the basis of gypsum-cement-puzzolano binders were studied. They contained 50-60% of gypsum-semihydrate, 20-30% of Portland cement and 10-30% of an active hydraulic additive. The latter was added to reduce the Ca concentration to 1 g/liter in aqueous solution during the hardening in the first days. Rapidly hardening, non-autoclaved, frost- and water resistant honeycomb concretes were obtained with a volume weight of 400-900 kg/m³ and a strength of 15-45 kg/cm², with a cement consumption of ~100 kg/m³. They were produced by mixing the initial components: ✓

Card 1/2

Honeycomb concretes on the basis of ... S/081/61/000/021/056/094
B110/B101

binder, sand and gas- or foam forming additives and by hardening the
products in air at ordinary temperatures or by heat treatment at 75°C.
[Abstracter's note: Complete translation.]

Card 2/2

VOLZHENSKIY, Aleksandr Vasil'yevich, prof.; POPOV, Leonid Nikolayevich,
kand. tekhn. nauk; CHERKINSKAYA, R.L., red. izd-va; ABRAMOVA, V.A.,
tekhn. red.

[Repeatedly-ground blended portland cements and concretes made from
them] Smeshannyye portlandtsementy povtornogo pomola i betony na ikh
osnove. Moskva, Gos. izd-vo lit-ry po stroit., arkhitekt. i stroit.
materialam, 1961. 105 p. (MIRA 14:9)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR
(for Volzhenskiy). (Concrete)
(Portland cement)

VOLZHENSKIY, A.V., prof.; GAYGALAS, K.P., inzh.

Binding materials based on peat cinders. Stroi. mat. 7 no. 1:22-
25 Ja '61. (MIRA 14:1)

1. Devstvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).
(Binding materials)

VOZHENSKIY, A.V., prof.; GIADIKH, K.V., inzh.; VINOGRADOV,
B.N., inzh.

Investigating the hardening processes in binding materials
made with granular furnace slags. Stroi. mat. 6 no.6:31-
33 Je '60. (MIRA 13:6)

1. Daystvitel'nyy chlen Akademii stroitel'stva i arkhitek-
tury SSSR (for Vozhenskiy).
(Binding materials) (Slag)

VOIZHENSKIY, A.V., prof.; POPOV, L.N., kand.tekhn.nauk

High-strength fine grained concretes made with sandy portland cements. Bet. 1 zhel.-bet. no.2:51-55 P '60. (MIRA 13:6)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Volzhenskiy)
(Lightweight concrete)

VOLZHENSKIY, A.V. prof.

Objectives in the production and use of autoclave-hardened
and other products in precast construction. Stroi.mat. 6
no.1:17-20 Ja '60. (MIRA 13:5)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR.

(Precast concrete) (Lightweight concrete)

VOLZHENSKIY, A.V.; prof.; SILAYENKOV, Ye.S., kand.tekhn.nauk;
KHARINA, T.V., inzh.

Resistance of autoclave-hardened slag-sand materials sub-
jected to the action of corrosive media. Stroi.mat. 5
no.11:32-34 N '59. (MIRA 13:3)

1. Daystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
(for Volzhenskiy).
(Concrete—Corrosion)

VOLZHENSKIY, A.V., prof.; ROGOVOY, M.I.; STAMBULKO, V.I.; SHEPAYER,
A.L., red.izd-va; OSENKO, L.M., tekhn.red.

[Gypsum-cement and gypsum-slag binding materials and products]
Gipsotsementnye i gipsoshlakovye vlyazhmashchie i izdeliia. Pod
obshchey red. A.V.Volzhenetskogo. Moskva, Gos.izd-vo lit-ry po
stroit., arkhitekt. i stroit.materialam, 1960. 166 p.

(MIRA 13:6)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).
(Gypsum) (Binding materials)

VOLZHENSKIY, A.V. ; GLADIKH, K.V., inzh.

Fine grained concretes and building products based on binder
made of granulated furnace slags. Stroil. mat. 6 no.10:22-25 0
'60. (MIRA 13:10)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR.

(Building materials)

VOLZHENSKIY, A.V., prof.; TIRANOVA, T.M., inzh.

Clinkerless binding materials made out of phosphoric slag.
Stroi. mat.9 no.6:31-33 Je '63. (MIRA 17:8)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Volzhenskiy).

VOLZHENS'KIY, D.S.

S/058/63/000/003/064/104
A059/A101

AUTHORS: Pashkovs'kyi, M. V., Volzhens'kyi, D. S., Svyetolkina, L. G.

TITLE: The synthesis of crystals of the oxide system $\text{Cu}_2\text{O} - \text{V}_2\text{O}_5$

PERIODICAL: Referativnyi zhurnal, Fizika, no. 3, 1963, 49, abstract 3E325
("Visnyk L'vivsk. un-tu. Ser. Fiz.", 1962, no. 1(8), 115 - 116,
Ukrainian)

TEXT: By cooling the melt at a rate of 2 degrees per hour from a temperature of 700°C , single crystals of chemical compounds were grown with the properties of copper oxide - vanadium oxide bronzes. The curves of differential thermal analysis are given permitting to find the phase transition points of alloys with different contents of Cu_2O and V_2O_5 .

V. Kosevich

[Abstractor's note: Complete translation]

Card 1/1

8/078/63/008/001/025/026
B117/B108

AUTHORS: Volzhenskiy, D. 3., Pashkovskiy, M. V., Svekolkina, L. G.

TITLE: Some physical properties of oxygen-containing copper vanadium and silver vanadium bronzes

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 8, no. 1, 1963, 255-257

TEXT: The physical properties of bronze single crystals grown by slow cooling of melts from vanadium pentoxide with 20, 25, and 30% by weight of copper-(I) oxide or silver nitrate have been studied. Shape, color, and yield of the bronzes depended on the content of copper and silver in the melt. The crystal structure was little affected by heat treatment (400°C) in air or in vacuo. The electrical conductivity of the copper vanadium bronze increased with increasing copper concentration and temperature. The electrical conductivity of silver vanadium bronze produced from the melt with 20 and 25% AgNO_3 showed a similar temperature dependence. For samples obtained from the melt with 30% AgNO_3 , the electrical conductivity decreased at higher temperatures. The thermo-emf was of the same order for

Card 1/2

Some physical properties of ...

S/078/63/008/001/025/026
B117/B108

the two bronze types, and increased with increasing temperature within a wide range. For samples with 25 and 30% Cu_2O or 30% AgNO_3 , the thermo-emf changes its sign twice in the vicinity of -100°C . The thermo-emf of all other samples showed a maximum in the negative centigrade range, and was nearly constant between -50 and $+150^\circ\text{C}$. Also the Hall constant changes its sign twice within the same temperature range. This is attributed to phase transitions. There are 2 figures and 1 table.

ASSOCIATION: L'vovskiy gosuniversitet im. Iv. Franko (L'vov State University imeni Iv. Franko)

SUBMITTED: April 26, 1962

Card 2/2

PASHKOVSKIY, M.V. [Pashkovs'kyi, M.V.]; VOLZHENSKIY, D.S. [Volzhens'kyi, D.S.]

Studying the properties of the semiconductor systems $\text{Cu}_2\text{O}\cdot\text{Nb}_2\text{O}_5$
and $\text{Cu}_2\text{O}\cdot\text{V}_2\text{O}_5$. Ukr. fiz. zhur. 6 no.4:549-555 J1-Ag '61. (MIRA 14:9)

1. L'vovskiy gosudarstvennyy universitet im. Iv. Franko.
(Semiconductors)

VOLZHENSKIY, D.S.; PASHKOVSKIY, M.V.; SVEKOLKINA, L.G.

Physical properties of oxygen vanadium bronzes of copper
and silver. Zhur.neorg.khim. 8 no.1:255-257 Ja '63.
(MIRA 16'5)

1. L'vovskiy gosudarstvennyy universitet imeni Iv.Franko.
(Vanadium bronzes)

PASHKOVSKIY, M.V.; RYBALEA, V.V.; VOLZHENSKIY, D.S.

Simple device for regulating the temperature under laboratory conditions. Prib. i tekhn. eksp. no.6:134 H-D '60. (MIRA 13:12)

1. L'vovskiy gosudarstvennyy universitet.
(Temperature regulators)

VOL'ZHENSKIY, D.S.

27968
S/185/61/006/004/013/015
D274/D303

24.7700 (1035, 1043, 1164)

AUTHORS: Pashkovs'kyi, M.V. and Volzhens'kyi, D.S.
TITLE: Study of properties of semiconductor systems Cu_2O , Nb_2O_5 and $\text{Cu}_2\text{O} \cdot \text{V}_2\text{O}_5$
PERIODICAL: Ukrayins'kyi fizychnyy zhurnal, v. 6, no. 4, 1961, 549-554

TEXT: The substances used in the investigation were Cu_2O , V_2O_5 and Nb_2O_5 of type (grade) "ChDA". The specimens (in the form of tablets with diameter 8 mm and thickness 2-4 mm) were sintered in an electric furnace in an atmosphere of air at a temperature of 1200°C for 3 hours: Then they were cooled in air. The resistivity ρ of the specimens was measured. A figure shows $\log \rho$ plotted against weight % of Cu_2O for the specimens $\text{Cu}_2\text{O} \cdot \text{Nb}_2\text{O}_5$. This dependence has a linear character. Hence the conclusion that the obtained system $\text{Cu}_2\text{O} \cdot \text{Nb}_2\text{O}_5$ is a mechanical mixture of components. This

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is also confirmed by microstructural and X-ray analysis. The system $\text{Cu}_2\text{O} \cdot \text{V}_2\text{O}_5$ was similarly prepared, melted in crucibles and tempered in cold, distilled water. The resistivity of such specimens was measured. The obtained curves show a minimum in the region of 50 weight %. The presence of a singular point on the curves, three phases in some specimens, as well as the results of X-ray structural analysis, lead to the conclusion that a chemical compound was formed under the given conditions. A picture of one of the obtained alloys is shown. The resistivity measured in single crystals of specimens with 30 to 50 weight % Cu_2O , was approximately 10^{-1} ohm/cm. With further increase in Cu_2O content, the resistivity increases, approaching the resistivity of pure Cu_2O . For crystals with 30, 50 and 60 weight % Cu_2O , the temperature dependence of the electrical conductivity was measured over a temperature range of -160 to +23°C, and the activation energy of carriers calculated. The graphs show, for all the specimens, an increase in conductivity with temperature. The activation energy is constant (equal to 0.25 eV) from -160 to -20°C; at higher temperatures it decreases,

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but it increases with resistivity of specimen, i.e. it depends on how the specimen was obtained. Further, the electrical properties of $\text{Cu}_2\text{O} \cdot \text{V}_2\text{O}_5$ are compared with those of V_2O_5 . Such a comparison shows that the semiconductor properties of the oxygenic lattice VO_6 appear quite strongly. Whereas in the case of sodium tungsten-bronzes the penetration of Na-atoms into the WO_3 -lattice led to conductivity of a metallic character, in the case of vanadium pentoxide, only a negligible increase in conductivity was observed. The author suggests the following interpretation of the results obtained. The copper atoms yield their valence electrons to the covalent bond with oxygenic lattice, forming in the forbidden zone of vanadium pentoxide additional donor levels. This assumption is supported by Neubuhr's theory (Ref. 21: F.F. Vol'kensteyn, *Elektroprovodnost' poluprovodnikov* (Electrical Conductivity of Semiconductors), M.-L., 1947). The decrease in activation energy of copper-vanadium bronzes compared to pure vanadium pentoxide, is due to the location of levels in the new chemical compound and to their concentration. There are 6 figures and 21 references: 13 Soviet-bloc and 8 non-Sov-

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Study of properties...

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iet-bloc. The 4 most recent references to English-language publications read as follows: L.E. Conroy, M.J. Sienko, J. Am. Chem. Soc., 79, 4048, 1957; M.J. Sienko, J. Am. Chem. Soc., 81, 5556, 1959; A.D. Wadsley, Acta Cryst., 8, 695, 1955; L.H. Brixner, J. Inorg. Nucl. Chem., 14, 225, 1960. 4

ASSOCIATION: L'vivs'kyi derzhuniversytet im. Iv. Franka (L'viv State University im. Iv. Franko)

SUBMITTED: December 26, 1960

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6C

SYNOPSIS AND PROPERTY INDEX

L I 2

Cyclopentadiene in products of pyrolysis of kerosene. I. A. VALKOVSKI and A. P. SONTSEVLOVA (Sintet. Kachuk, 1933, No. 4, 31-35).—cyclopentadiene forms the greater part of the diene content of the fraction b.p. 28-80° in the rectification of divinyl (from kerosene); the total diene content of this fraction was 30-35%.
CH. ASS.

ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION

FROM SYNOPTIC
TOPOLOGY 4

FROM SYNOPSIS
SYNOPSIS CH. DIV. 151

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Ca

The stability of butadiene in nitrogen mixtures at the temperatures 350-500°. I. A. Volgin, M. K. Zheglov, L. B. Rubina and M. S. Shcherbinova. *Soviet. Kaucuk* 1956, No. 1, 8-12. The stability of butadiene (I) with N₂ in the ratio of 75:25; 50:50 and 25:75 at 250-400° was tested when the gas mixt. was passed at the rate of 40.75, 81.5 and 163 cc. per min. per sq. cm. of the tube. At the rate of 163 cc. per min., ratio I to II 25:75 and temp. 375° and 400°, the proportion of I did not change, at 350° and 400°, the proportion of I had changed and at 500° and ratio 75:25, 24.10% of I had changed and at ratio 50:50, 17.70% had changed; At the velocity of 40.75 cc. per min., 300°, and 75:25 ratio, 76.00% of I had changed; at 50:50, 41.70%, and at 25:75, 27.90%. The main product of I change was its dimer: 1-vinyl-3-cyclohexene. II and CH₂ were present in the products of reactions at high temp. and low velocity. A. Pestoff

ASB-55.6 DETAILING LITERATURE CLASSIFICATION

CLASS	NO.	DATE	BY	REMARKS
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99	99	99	99	99
100	100	100	100	100

The stability of butadiene at different temperatures in the presence of the catalyst of S. V. Lebedev (complex catalyst for synthesis of butadiene from ethanol). I. A. Volchinskii, G. M. Kogan and O. M. Nelmark. *Soviet Akademiya* 1936, No. 1, 4 h. The catalyst decreased the stability of butadiene (1). Gas contg 11.14% of 1 was passed through 2 in. of catalyst at the rate of 14.5 cc. per sec. at 500°; the resulting gas contained 7.51% 1.

A. Pestoff

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CH

Laboratory furnace and experimental equipment for the preparation of divinyl from alcohol. S. V. Lebedev, I. A. Volodinski, B. O. Kibrikshin, O. O. Kobyaschik, V. P. Kravtsov, M. A. Krupnikov and Ya. M. Skobodin. *Trudy Gosudarst. Opit. Zavoda Sintet. Kachestva Litva B. III. Synthetic Rubber* 7-16(1934).—The so-called lab. furnace was placed in operation in 1928 and it permitted the prepn. of the first of 2.5 kg. synthetic rubber. The microfurnace was constructed entirely of glass and had a capacity of 5 cc. 98% alc. The "one-meter" furnace had reaction chambers of 1 m., while for the recovery of the catalyst a 3.5-m. chamber was used. The general procedure was as follows: Alc. was decompd. in a battery of 6 furnaces (1 m. each), being admitted at a velocity of about 600 cc. per hr. into the superheater at 400-525°. The vapor then entered into the catalytic chamber where it was converted into gaseous and liquid products, described in the first issue, p. 2, 1933, of the above publication. The products were further passed into a cooler and the receiver chilled with ice. The unabsorbed gaseous products were removed by means of a vacuum (30-50 mm. Hg) and passed through scrubbers with petroleum coke, flushed with turpentine or another absorbent, for the absorption of divinyl, pseudobutylene and part of the other gases. The compn. of the gases before and after the scrubber was, resp.: CO₂ 1-2.5, 1.5-3; unsat. rates 46-55, 27-35; air (by O₂) 3-4, about 5; CO 0.5-1, 1-1.5; H₂ about 40, 53-55; paraff. hydrocarbons, about

1.2, 2.5-3%; and divinyl in 1 l. of gas (by tetrabromide), about 0.5 g., 0.050-0.048 g. The solvent was distd. off and the gases were fractionated and passed through a 50% caustic soln. to remove AcH. The final gas contained 77-90% divinyl, 15-20% pseudobutylene, about 3% of a residue and less than 1% AcH. A detailed description of the equipment and its operation is presented.

A. A. Bochtinsk

1st and 2nd (1949)		PROCESSING AND RECORDING		3rd and 4th (1949)	
<p>24</p> <p>35</p> <p>Oxidation of synthetic rubbers. I. A. Volzhinski and I. I. Loginova. <i>Caoutchouc & Rubber</i> (U.S.S.R.) No. 4 3, 41-7 (1940).—Various synthetic rubbers were oxidized in darkness in air at room temp. and at 100°, and the quantity and nature of the oxidation products, and the mech. properties of the rubbers before and after oxidation, were detd. Na-butadiene polymer of 0.3 plasticity, not purified by pptn. from CCl₄, did not absorb O₂ to any perceptible degree in 24 hrs. The polymer remained soft and elastic, and did not lose its characteristic properties. Liquid "divinol" (an unidentified product from divinyl) was oxidized to a great extent, with decrease in plasticity and soly. in ordinary rubber solvents. The tensile strength of the polymer contg. oxidized "divinol" was greater than that contg. unoxidized "divinol." Rubber contg. 2% of the oleates of Cu, Mn or Co reacted energetically with O. The rubber was degraded and transformed into a solid, crumbly substance which could not be milled. The compd. contained 10-18% O. Na butadiene in CCl₄ soln. did not absorb much O, but did undergo changes in mech. properties. Twenty-eight references.</p> <p>H. Z. Kammch.</p>					
<p>ASB-35A METALLURGICAL LITERATURE CLASSIFICATION</p>					
1st and 2nd (1949)		3rd and 4th (1949)		5th and 6th (1949)	
1st and 2nd (1949)		3rd and 4th (1949)		5th and 6th (1949)	

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CR

Cyclopentadiene in products of pyrolysis of kerosene. I. A. Volchinskii and A. P. Shebekhova. *Soviet. Kauchuk* 1933, No. 4, 31-5. — A preliminary report on the investigation made to det. the diene hydrocarbon content of a high-boiling fraction obtained in the process of rectification of kerosene; it was found that cyclopentadiene formed the greater part of the diene content of the 24-50° fraction; the total diene content of this fraction was 30-35% as detd. by SO₂. James Sorrel

ASH. 55A METALLURGICAL LITERATURE CLASSIFICATION

STANDARD NO. 1

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CA

1ST AND 2ND EDITIONS

PROCESSES AND PROPERTIES INDEX

Cyclopentadiene in products of pyrolysis of kerosene
 J. A. Volzhinskiy and A. P. Shchegoleva. *Soviet. Khimika*
 1933, No. 4, 31-35.---A preliminary report on the in-
 vestigation made to det. the diene hydrocarbon content
 of the high-boiling fraction obtained in the process of
 rectification of bisvinyl; bisvinyl was produced by py-
 rolysis of kerosene in vacuo. It was found that cyclo-
 pentadiene formed the greater part of the diene content
 of the 25-50° fraction; the total diene content of this
 fraction was 20-25% as detd. by SO₂. James Borrel

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1900-1930

1931-1940

1941-1950

1951-1960

1961-1970

1971-1980

1981-1990

1991-2000

2001-2010

2011-2020

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Recovery of s-dimethylsiloxane from air by silica gel. I. A. Volzhinskiĭ, V. A. Golobov and Z. A. Kirenova.
Sindet. Kazachst-1984, No. 1, 1-12.—Silica gel used was activated by heating it in an elec. furnace for 3.5-4 hrs. at 270-280°. It readily adsorbed CH₃CH=CHCH₃ (max. 6%, av. 4% by wt. at 20°). The speed of air passage was 0.0025-0.1296 m. per sec. Adsorbed C₄H₈ was easily re-covered and silica gel easily regenerated by heating silica gel to 200-225° in an elec. furnace: 75-94% by wt. of gas was recovered. The regenerated silica gel is somewhat less adsorptive than a fresh one. A. Pestoff

VOLZHIN, A.K.

Cementing columns by reverse compaction with radioactive control.
Neftianik 6 no.7:10-11 J1 '61. (MIRA 14:7)

1. Starshiy inzhener proizvodstvenno-tekhnicheskogo otdeleniya
kontory bureniya Neftpromyslovogo upravleniya Starogrozneft'.
(Oil well cementing)
(Radioisotopes—Industrial applications)